

REMARKS/ARGUMENTS

Claims 1-3 and 8-19 are active. Claims 4-7 have been withdrawn from consideration and claims 5 and 6 amended to depend from claim 4 to reduce claim fees. Claims 1-3 have been revised for clarity. Claim 1 also refers to a zinc can formed by pressing at a temperature ranging from 120-180°C. Express support for this range appears on page 25, line 1 of the specification. New claim 8 finds support in claim 3 and claims 9-11 at the bottom of page 5 of the specification. The process in claim 12 is described at the bottom of page 24. Claim 13 tracks claim 1, but employs the transitional phrase "consisting essentially of"¹. Claims 14-16 track the limitations in claims 1 and 3. Claims 17-19 are directed to batteries comprising the zinc can of claim 1 and find support in the language of original claim 1 and in claims 5 and 6. No new matter has been added. Favorable consideration of this response and allowance of this case are respectfully requested.

Objection--Title

The Title has been revised for consistency with the present claims, mooted this objection.

Objection

Claim 3 was objected because it contained parenthesis. This objection is now moot.

¹ The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976); MPEP 2111.03.

Rejection—35 U.S.C. §112, second paragraph

Claim 3 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

This rejection is moot in view of the amendments above.

Rejection—35 U.S.C. §102/103(a)

Claims 1-3 were rejected under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. 103(a) as being unpatentable over Hikata, et al., JP-07-94193.

Hikata does not disclose or suggest the zinc alloy structure of the invention and cannot anticipate or render the invention obvious.

Hikata cannot anticipate the present claims because it does not disclose the process step required by claim 1 as amended:

. . . wherein said zinc can is formed by pressing at a temperature in the range of 120-180°C.

While Hikata paragraph [0011] describes producing a can by “the impact extrusion method”, it does not disclose or suggest the temperature range of 120-180°C required by claim 1. Selection of this temperature range provides the metal structure and I/O ranges required by claims 1 and 3. It is well-known that impact extrusion can be performed cold (e.g., at room temperature) or hot². Hikata is silent about the temperature at which metallic zinc-bismuth composition was extruded and provides no motivation for selecting the range 120-180°C. To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons

² U.S. Patent No. 6,074,779 indicates: Extrusion can be performed either hot or cold, depending on the work, the type of metal, and the amount of strain to which the work is subjected during the formation. Metals typically extruded hot include aluminum, copper, magnesium, zinc, tin, and their alloys. These same metals are sometimes extruded cold. Steel alloys are usually extruded hot, although the softer, more ductile grades, are sometimes cold extruded, e.g., low-carbon steels and stainless steels). Aluminum is probably the most ideal metal for extrusion, hot and cold and many commercial aluminum products are made by this process.

of ordinary skill, *Continental Can. Co. USA v. Monsanto Co.*, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991), see also MPEP 2131.01 (III). Hikata does not establish that the zinc-bismuth alloy samples it discloses were produced by pressing within this temperature range. However, the selection of this temperature range affects the structural and chemical properties of the zinc cans produced, see e.g., page 16, paragraph [0026] of the specification. Consequently, Hikata does not anticipate the present claims, nor does it render it obvious since it is silent about selection of this temperature range and does not contemplate the structural, chemical and physical properties obtained by selecting this range.

Furthermore, Hikata, Tables 3 and 4 do not exemplify the zinc-bismuth metallic composition of the invention and cannot anticipate it because these compositions do not contain the amounts of bismuth required by claim 1. Even if Tables 1 and 2 describe zinc-bismuth alloys having similar metallic compositions to those of the invention, it is impossible to establish whether these compositions have the same structural characteristics required by the invention since Hikata does not say what temperature these samples were pressed at and thus cannot enable the metallic compositions of the invention. Where a process for making the compound is not developed until after the date of invention, the mere naming of a compound in a reference, without more, cannot constitute a description of the compound. *In re Hoeksema*, 399 F.2d 269, 158 USPQ 596 (CCPA 1968), see MPEP 2121.02. Moreover, "In determining that quantum of prior art disclosure which is necessary to declare an applicant's invention 'not novel' or 'anticipated' within section 102, the stated test is whether a reference contains an 'enabling disclosure'... ." *In re Hoeksema*, 399 F.2d 269, 158 USPQ 596 (CCPA 1968). The disclosure in an assertedly anticipating reference must provide an enabling disclosure of the desired subject matter; mere naming or description of the subject matter is insufficient, if it cannot be produced without undue experimentation. *Elan Pharm., Inc. v. **>Mayo Found. For Med. Educ. & Research<*, 346 F.3d 1051, 1054, 68 USPQ2d

1373, 1376 (Fed. Cir. 2003). Here, Hikata, the asserted prior art reference, does not show that the process of making the zinc can by selecting a pressing temperature 120-180°C was known at the time of invention and at merely names or describes certain zinc-bismuth alloys.

On the other hand, the inventors have recognized the significance of carefully selecting the 120-180°C temperature range. They found that crystallization temperature falls by when bismuth and zinc are alloyed compared to prior art alloys containing lead lea but that the average grain diameter of the zinc-bismuth alloy of the invention can be controlled by avoiding recrystallization by selecting the temperature range of 120-180°C.

Consequently, Hikata cannot anticipate the invention because it does not meet all the limitations of claim 1 and is a non-enabling of the required process condition as well as how to make the metallic structures characteristic of the invention. It cannot render the invention obvious because it does not disclose or suggest the process step in claim 1 or suggest or provide a reasonable expectation of success for the characteristic structural and functional properties of the claimed zinc can. Therefore, this rejection cannot be sustained.

Rejection—35 U.S.C. §102/103(a)

Claims 1-3 were rejected under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. 103(a) as being unpatentable over Kobayashi, et al., JP-2000-58045. Kobayashi also cannot anticipate or render the invention obvious because it does not disclose or suggest producing the zinc can as required by claim 1:

. . . wherein said zinc can is formed by pressing at a temperature in the range of 120-180°C.

Kobayashi (machine-translation) at the end of paragraph [0011] refers to the “impact extrusion method” which appears to refer to how the zinc can was made. However, like Hikata above, Kobayashi is silent about selection of a temperature ranging from 120-180°C.

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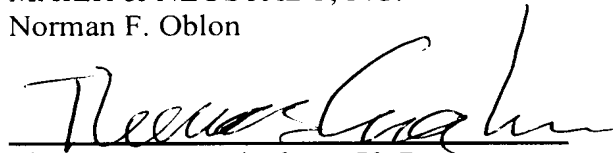
Consequently, this rejection cannot be sustained for reasons similar to those explained above for Hikata.

Conclusion

In view of the amendments and remarks above, the Applicants respectfully submit that this application is now in condition for allowance. An early notice to that effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

A handwritten signature in black ink, appearing to read 'Thomas M. Cunningham', is written over a horizontal line.

Thomas M. Cunningham, Ph.D.
Registration No. 45,394

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)